

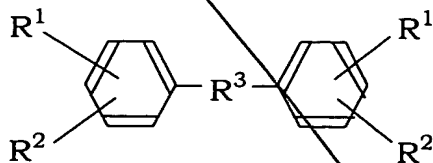
CLAIMS

1. A fluorine-containing rubber composition for crosslinking which comprises a fluorine-containing elastomer having carboxyl group and/or alkoxy carbonyl group at an end of a trunk chain and/or branched chain as a crosslinkable group.

2. The fluorine-containing rubber composition for crosslinking of Claim 1, which comprises a fluorine-containing elastomer having carboxyl group at an end of a trunk chain and/or branched chain as a crosslinkable group.

3. The fluorine-containing rubber composition for crosslinking of Claim 2, which comprises a fluorine-containing elastomer having carboxyl group at an end of a trunk chain as a crosslinkable group.

4. The fluorine-containing rubber composition for crosslinking which comprises 100 parts of the fluorine-containing elastomer of any of Claims 1 to 3 and 0.5 to 5.0 parts by weight of a crosslinking agent represented by the formula (III):



wherein one of R^1 and R^2 is $-NH_2$ and another one is $-NH_2$, $-OH$ or $-SH$,

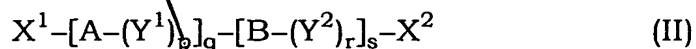
R³ is -SO₂-, -O-, -CO-, an alkylene group having 1 to 6 carbon atoms, a perfluoroalkylene group having 1 to 10 carbon atoms or a single bond.

5 The fluorine-containing rubber composition for crosslinking of Claim 4, wherein a bisaminophenyl crosslinking agent of the formula (III), in which each of R¹ and R² is -NH₂, is used.

10 6. The fluorine-containing rubber composition for crosslinking of Claim 1, wherein the fluorine-containing elastomer has carboxyl group and/or alkoxycarbonyl group at an end of a trunk chain and/or branched chain as a crosslinkable group and is represented by the formula (I):



or the formula (II):



20 wherein X¹ and X² are the same or different and each is carboxyl group, alkoxycarbonyl group, iodine atom, bromine atom or sulfonic acid group, Y, Y¹ and Y² are the same or different and each is a divalent organic group having carboxyl group, alkoxycarbonyl group, iodine atom, bromine atom or nitrile group at a side chain thereof, A is an elastomeric
25 fluorine-containing polymer chain segment, B is a non-elastomeric fluorine-containing polymer chain segment, p is 0 or an integer of 1 to 10, q is an integer of 1 to 5, r is 0 or an integer of 1 to 10, s is an integer of 1

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to 3, any one of X^1 , X^2 , Y , Y^1 and Y^2 is carboxyl group or alkoxycarbonyl group, Y , Y^1 and Y^2 may be contained at random in the segment A or B.

7. The fluorine-containing rubber composition for crosslinking of Claim 6, wherein the elastomeric fluorine-containing polymer chain segment comprises not less than 90 % by mole of perhalo olefin unit as a component unit.

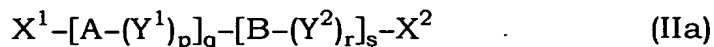
8. A process for preparing the fluorine-containing elastomer of Claim 1 or 2, which comprises polymerizing a fluorine-containing monomer by using, as one of a polymerization initiator and/or monomer, a compound giving carboxyl group and/or alkoxycarbonyl group to a trunk chain and/or branched chain and treating a polymerization product with an acid.

9. The preparation process of Claim 8, wherein the polymerization of fluorine-containing monomer is carried out by emulsion polymerization method.

10. A fluorine-containing elastomer which has carboxyl group at an end of a trunk chain as a crosslinkable group and is represented by the formula (Ia):



or the formula (IIa):



wherein X^1 and X^2 are the same or different and each is carboxyl group, alkoxy carbonyl group, iodine atom, bromine atom or sulfonic acid group, Y , Y^1 and Y^2 are the same or different and each is a divalent organic group having carboxyl group, alkoxy carbonyl group, iodine atom, bromine atom or nitrile group at a side chain thereof, A is an elastomeric fluorine-containing polymer chain segment, B is a non-elastomeric fluorine-containing polymer chain segment, p is 0 or an integer of 1 to 10, q is an integer of 1 to 5, r is 0 or an integer of 1 to 10, s is an integer of 1 to 3, any one of X^1 and X^2 is carboxyl group, Y , Y^1 and Y^2 may be contained at random in the segment A or B.

11. The fluorine-containing elastomer of Claim 10, wherein the elastomeric fluorine-containing polymer chain segment comprises not less than 90 % by mole of perhalo olefin unit as a component unit.

12. The fluorine-containing elastomer of Claim 10 or 11, which satisfies the following equation (1):

$$(S_{co}/S_{cf}) \times (D/D_p) \times (F/F_p) \geq 0.01 \quad (1)$$

wherein S_{co} , S_{cf} , D , D_p , F and F_p represent the following respective values.

S_{co} : Total area of absorbances at the absorptions derived from carbonyl group of associated and non-associated carboxyl groups having the absorption peaks at from 1,680 to 1,830 cm^{-1} when measurement is made with FT-IR with respect to the elastomer to be measured.

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Scf: Area of absorbance at absorption derived from a harmonic sound of C-F bond having an absorption peak at from 2,220 to 2,840 cm^{-1} when measurement is made with FT-IR with respect to the elastomer to be measured. In case where nitrile group is present, Scf is a value
5 obtained by subtracting an area of absorbance at absorption derived from nitrile group having an absorption peak at from 2,220 to 2,300 cm^{-1} from a total area of absorbances at whole absorption having a peak at from 2,220 to 2,840 cm^{-1} .

D: Specific gravity of the aimed elastomer at 20°C.

10 Dp: Specific gravity (measured value: 2.03) at 20°C of a standard perfluoro elastomer (copolymer of tetrafluoroethylene/perfluoro(methyl vinyl ether) in a mole ratio of 58/42).

F: Fluorine content (% by weight) of the elastomer to be measured obtained by elemental analysis.

15 Fp: Fluorine content (measured value: 71.6 % by weight) of said standard perfluoro elastomer obtained by elemental analysis.

13. A crosslinked fluorine-containing rubber molded article
obtained by crosslinking the fluorine-containing rubber composition for
20 crosslinking of any of Claims 1 to 7.

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